

REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 1 and 2 are in this case. Claim 1 and 2 have been rejected under § 103(a). Claims 1 and 2 are currently amended.

Claim Amendments

On reviewing the claims, various minor errors in punctuation and other minor informalities in the claims have come to the notice of the Applicant. These minor errors and informalities are addressed in the amendments submitted herewith.

Specifically, in claim 1, the word --and-- has been added before the last element listed, the erroneous capital letter "S" in "said" (line 11) has been changed to a small --s--, the word --wherein-- has been added and the semicolon at the end of the claim has been corrected to a period.

In claim 2, a comma has been added after the number "1" and the words "position and motion" have been deleted to ensure precise antecedent basis for the term "sensor" as used in claim 1. In the phrase "the cable less type", the definite article has been changed to an indefinite article, and the term "cable less" has been hyphenated.

The Applicant believes that these amendments correct all informalities in the claims.

§ 103(a) Rejections

The Examiner has rejected claim 1 under § 103(a) as being unpatentable over Andoh (US 5130383) in view of Lucas (US 5691582). The Examiner has also rejected

claim 2 under § 103(a) as being unpatentable over Andoh in view of Lucas as applied to claim 1, and further in view of Gal (US 6341563). The Examiner's rejections are respectfully traversed.

Andoh teaches both moving coil and moving magnet linear motor structures. In the case of the moving coil structure, Andoh shows an external "connector 9" which is "connected to a control circuit (not shown)" (col. 4 lines 5-7). The electrical connections are implicitly formed by flexible cable connections to the static control system. Thus, Andoh is merely representative of the conventional moving coil linear motors described in the Background of the present application.

Lucas et al. discloses a linear motor for use in a can body maker. The motor of Lucas et al. is a moving magnet type in which the power supply to the stator coils is generally not problematic.

The Examiner has stated: "*Lucas '582 discloses a linear motor having sliding brushes (column 9, line 3) for the purpose of energizing the stator coil. Therefore it would have been obvious to combine Andoh '383 linear motor with sliding brushes as taught by Lucas '582 for the purpose of energizing the stator coil*".

The brief reference to sliding brushes in Lucas et al., to the extent that it is understood, appears to be a proposed solution to the problem of switching current in the stator coils. The solution proposed seems to be that of a rail-type commutator where the brushes switch electrical contacts as a function of position of the armature.

Any attempt to combine the teachings of Andoh and Lucas et al. would, at best, result in a moving coil linear motor in which electrical polarity changes of the moving coils would be achieved by brushes switching between a series of short rails, together forming a linear commutator. This structure would be essentially similar to

that described in the prior reference U.S. Patent No. 4,733,143 to Chitayat mentioned in the Background of the present application.

By contrast, the device of the present invention avoids the arcing and wear caused by repeatedly breaking and making contacts via commutating brushes, instead using continuous contact rails to maintain unbroken contact between each brush and it's corresponding rail throughout the range of motion of the motor.

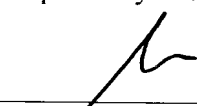
While continuing to traverse the Examiner's rejections, the Applicant has, in order to expedite the prosecution, chosen to amend independent claim 1 in order to clarify and emphasize the crucial distinctions between the device of the present invention and the devices of the patents cited by the Examiner. Specifically, claim 1 has been amended to clarify that each of the brush contacts maintains unbroken electrical contact with a corresponding one of the conductive rails during motion of the coils assembly. This feature is neither taught nor in any way suggested by the cited references when considered alone or in combination.

Amended independent claim 1 now features language which makes it absolutely clear that the device of the present invention is a moving-coil linear motor in which power to the coils is provided via brush contacts which maintain unbroken electrical contact with continuous contact rails. The Applicant believes that the amendment of the claims completely overcomes the Examiner's rejections on § 103(a) grounds.

In view of the above amendments and remarks it is respectfully submitted that independent claim 1, and hence also dependent claim 2, is in condition for allowance.

Prompt notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,



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Date: June 8, 2003